Technical Information WP 10 E 15/08/07

Installation and Service

-English-

INGROUND WHIRLPOOLS WITH OVERFLOW CHANNEL

AND POWER PAK

RivieraPool®

PREFABRICATED SWIMMINGPOOLS · WHIRLPOOLS

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1. General Remarks/Requirements on site

1.1 Specific Use and Purpose

Built-in whirlpools with the appropriate equipment and accessories are warm water bubble pools, that are designed for private and family use and are installed in fitness centers, hotels and large bathing areas. Outdoor installation is possible provided special precautions are taken regarding winterizing.

Private whirlpools contain about 700 – 1500 liters of water and are therefore too large to be filled and emptied with warm water each time a person bathes in the whirlpool. These whirlpools are like a swimming pool and need to be equipped with a filtration and heating system that maintains the proper disinfection and temperature of the water at all times.

The water needs to be changed about every 2 months. At that time the pool should be cleaned manually. Only clean tap water from the public supply should be used to refill the pool. The water quality should be like drinking water.

Private whirlpools emit humidity and sound. Therefore, a steam barrier, a humidifier and dehumidifier, and a whirlpool cover need to be installed, and, if necessary, special measures need to be taken to absorb the noise.

The maximum water temperature in the whirlpool can not be higher than 40° C. The chloride level can not be higher than 300 mg/l.

If you want to install a private whirlpool in a situation that is different from the one described above and as described in the installation and service instructions, we ask you to please contact us. There are different solutions available, for instance when salt water is used. Inappropriate use voids the warranty.

1.2 Subsoil/Foundation

The foundation should be level and firm and have the same dimensions as the whirlpool (see data sheet). The entire base of the whirlpool must stand completely flat on the ground so that its weight is properly supported. There must be sufficient head room above the whirlpool for getting in and out with ease.

If the pool is dropped in the ground, the prepared recess clearance in the base plate should be about 10 cm wider than the outside dimensions of the pool. The piping and insulation are located beneath the pool edge.

The concrete base for the equipment pack needs to be at the same level as the pool, so that the pumps are always filled with water. The distance between the equipment and the pool should never be more than 5 meters.

1.3 Power supply

Total connected load: 400V, 16 Amp. The whirlpool must be connected to the main power supply. The installation should be carried out by a qualified and licensed electrician and in compliance with local regulations.

1.4 Fresh water

Only water of drinking water quality from the mains should be used.

1.5 Waste water

The whirlpool should be emptied into the public sewage system (see diagram fort he proper connection).

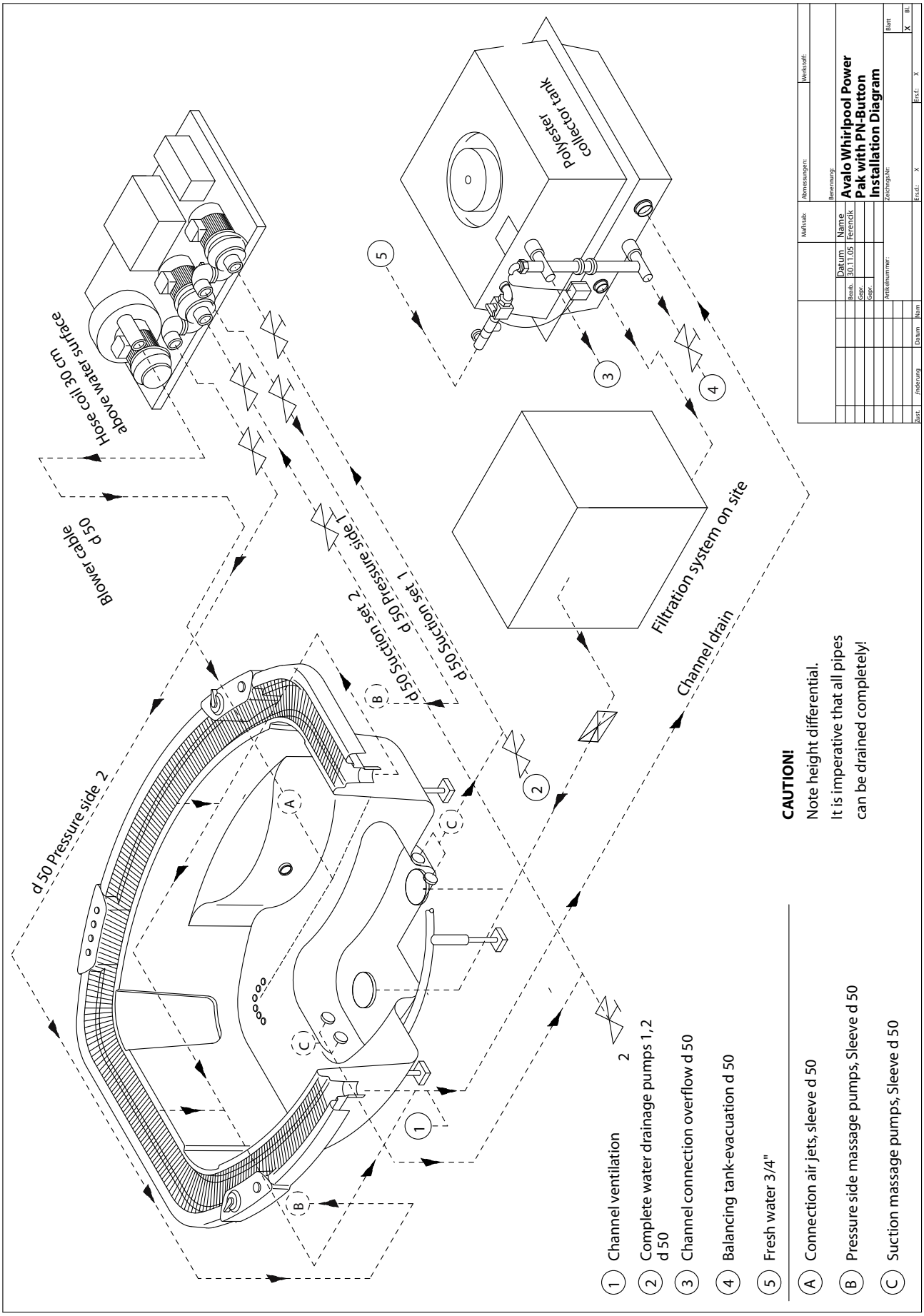
1.6 Delivery

The whirlpool is delivered on a pallet. The whirlpool should be transported to its destination completely packed, to avoid damage during transporation to the installation site. Immediately upon arrival the pool should be unpacked and inspected for any sign of damage.

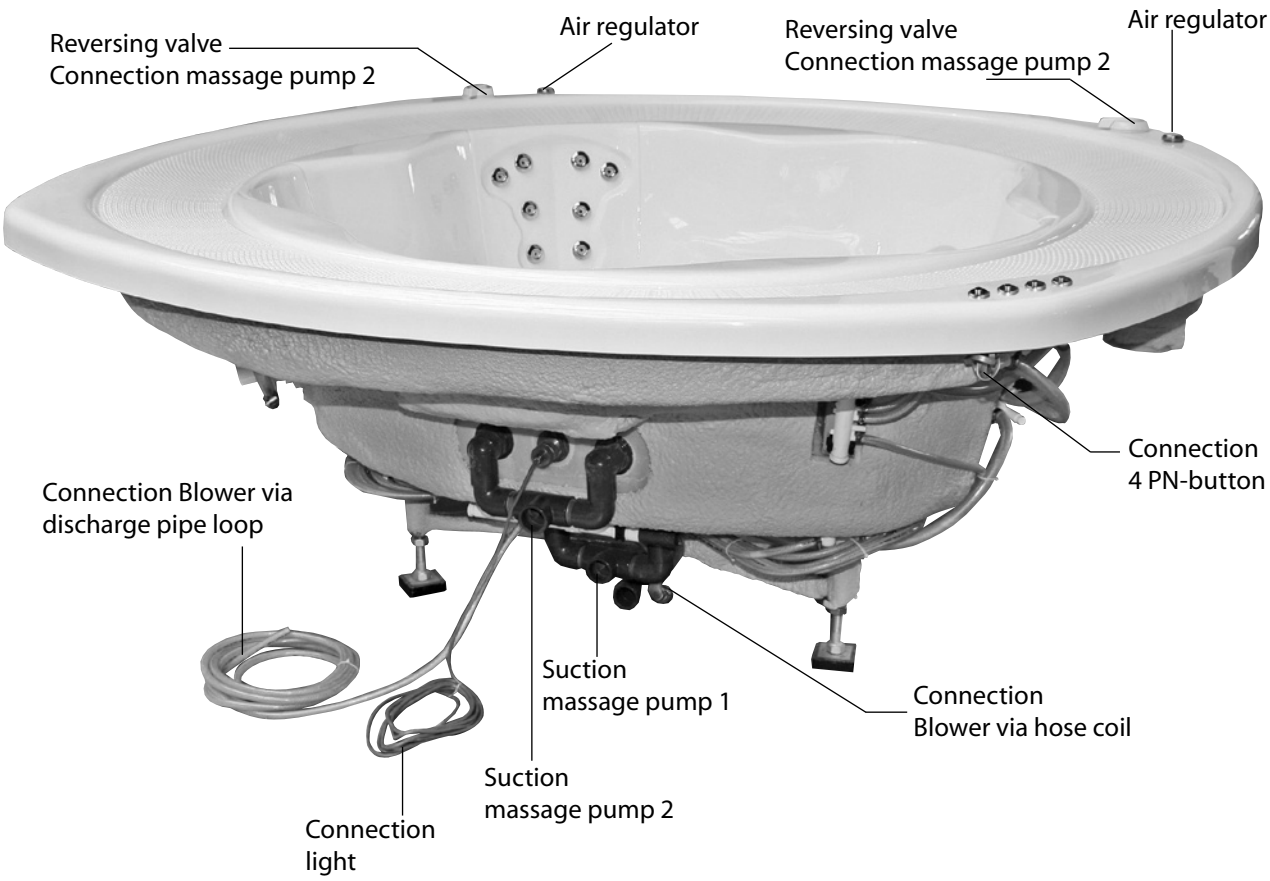
1.7 Noise insulation

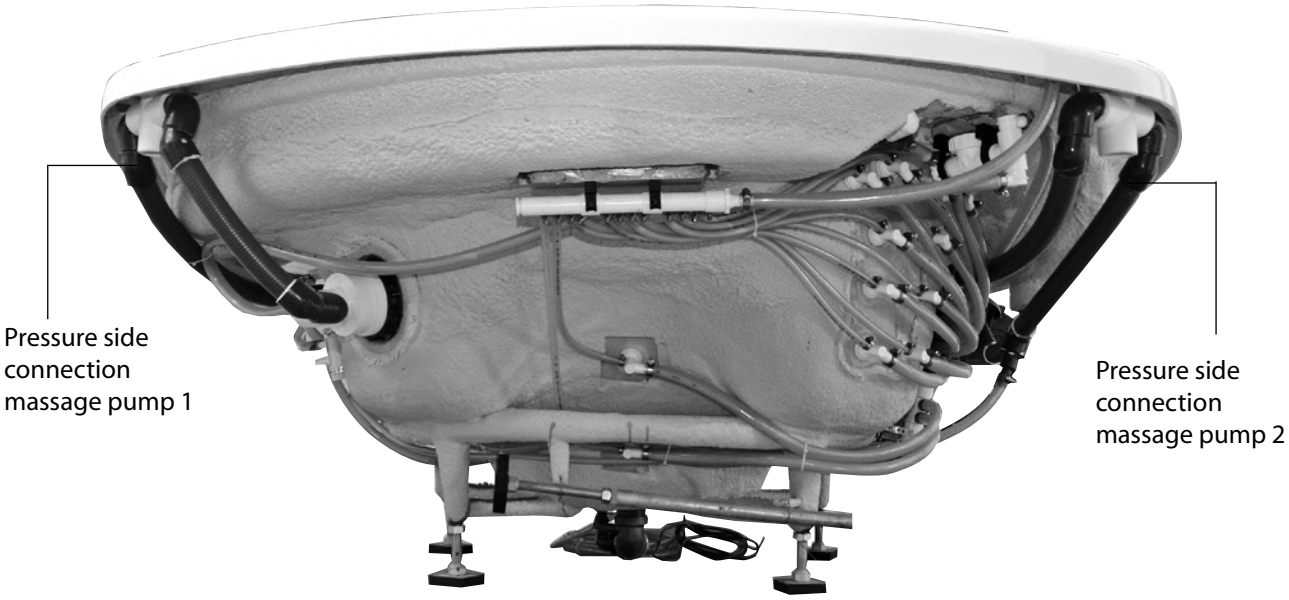
If the pool is installed next to bedrooms, for example, or any other rooms which according to DIN 4109 require special noise insulation, additional measures will have to be taken.

2.1 Installation Diagram

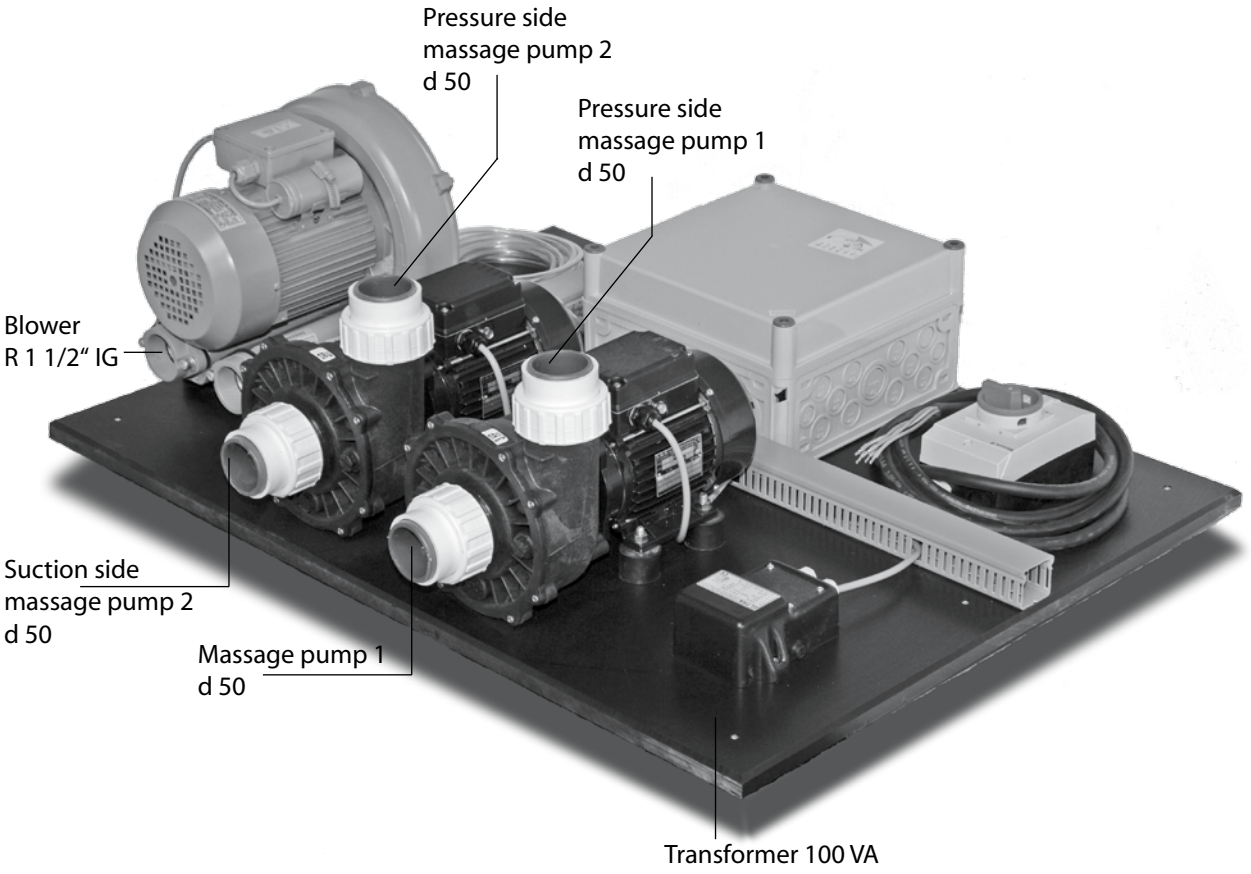


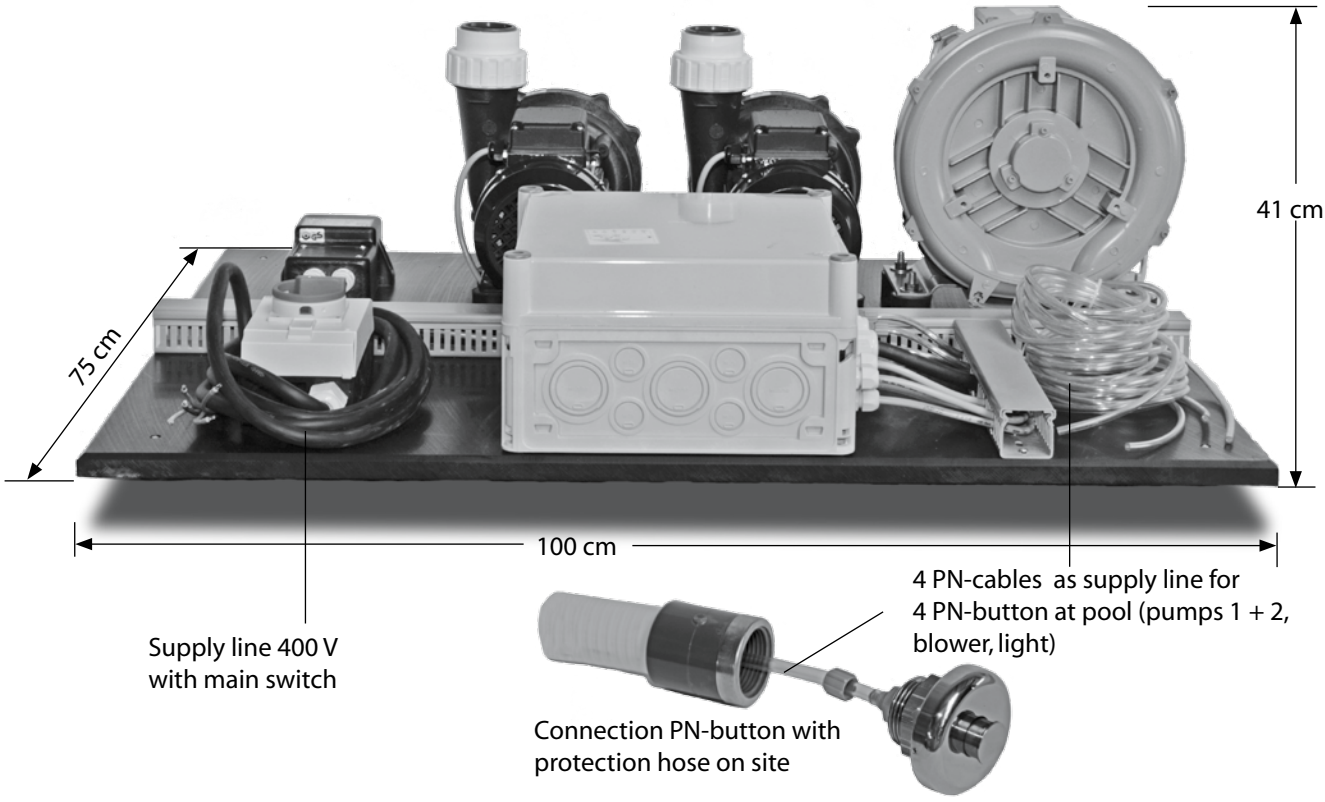
2.2 Connections at the pool



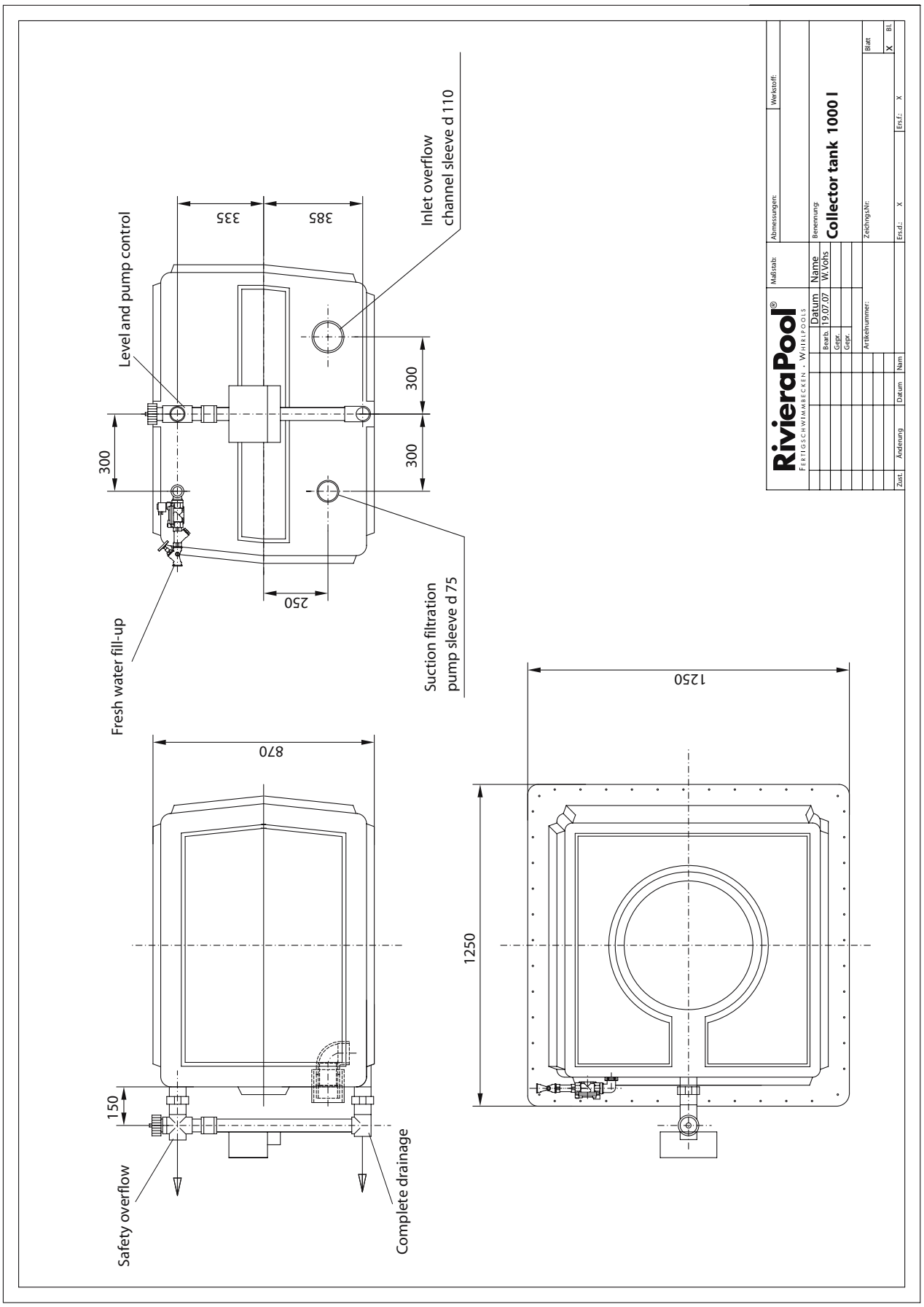


2.3 Description Power Pak

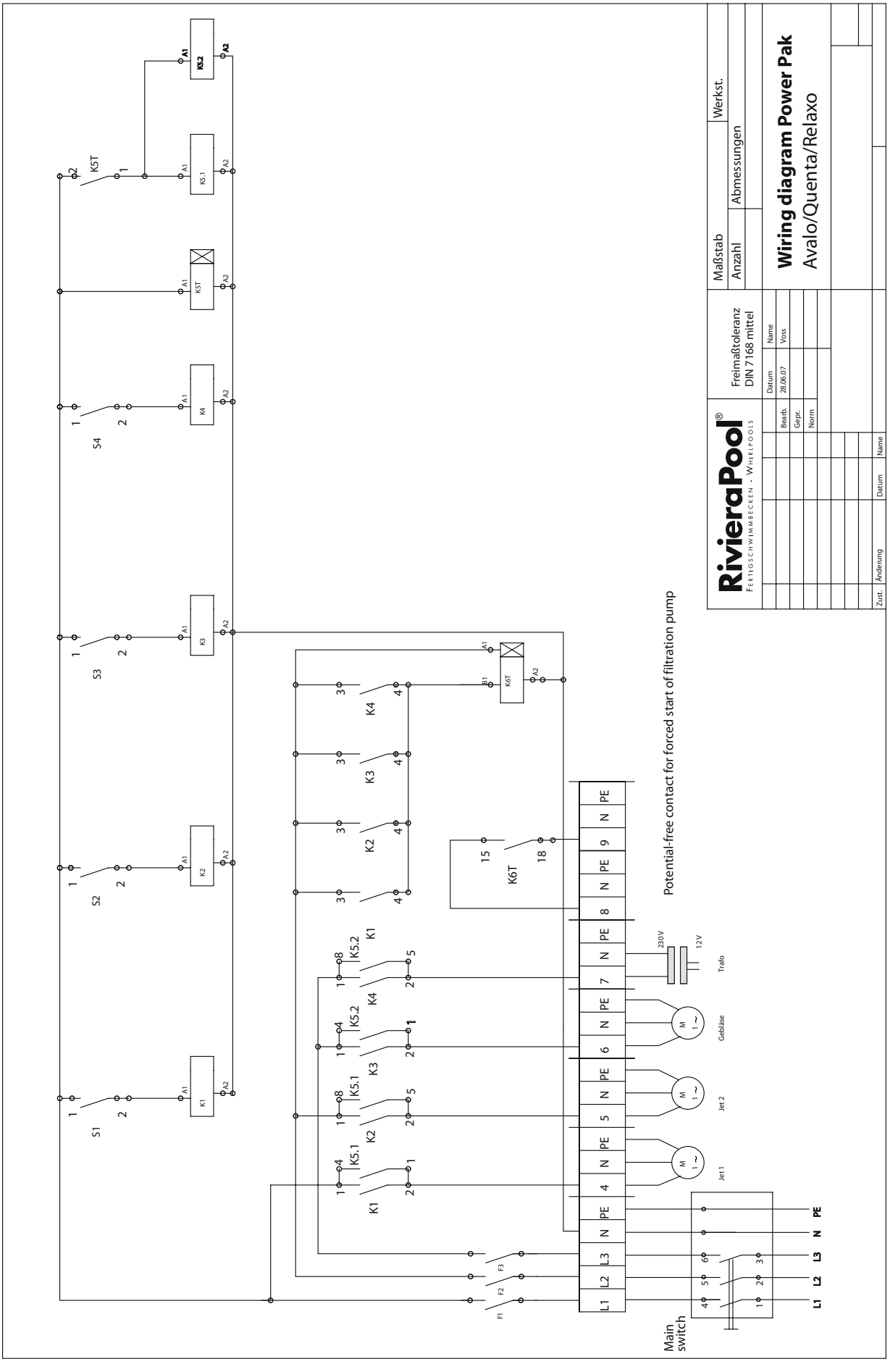




2.4 The collector tank



2.5 Wiring diagram Power Pak



2.6 Installation and operation osf-collector tank control

Collecting vessel control NR-12-TRS-2

Art.No.3030000030 (with solenoid valve)
Art.No.3030000020 (without solenoid valve)

Functioning:

The osf collecting vessel control NR-12-TRS-2 is a technically high-quality product Which can only work properly, if it is duly mounted and connected while observing the operating instructions. The osf NR-12-TRS-2 is best suitable for the use in pool units with overflow. It is an integrated connection scheme consisting of:

- electronic control unit
- dipped electrodes (optionally)
- solenoid valve (optionally)

The dipped electrodes which are operated at alternating voltage don't cause the formation of electrolytes in the water. The electrode lines can be prolonged up to 100m (min.1.5mm^2) without the need of an adjustment of the electronic system. The electronic switching process is specially designed for overflow collecting vessels. Due to a special switching technique, a direct switching process is not triggered in case of wave motions and excessively short switching distances are avoided.

The dipping electrodes are operated at a harmless safety extra-low voltage. The control unit itself is designed according to the regulations of the VDE which are currently in force.

Technical Data:

Control system:	
Dimensions:	220mm x 219mm x 100mm
Operating voltage:	230V/50Hz
Power consumption – control system:	abt.7VA
Capacity:	max. 1.1kW (AC3)*
Type of protection:	IP 40
Dipping electrodes:	
Dimensions:	ø24mm x 134mm
Line length:	3m
Operating voltage:	12V
Solenoid valve:	
Nominal width:	13mm (G½")
Operating voltage:	230V/50Hz
Nominal pressure:	0.5...10bar
Electr.connection:	Apparatus plug acc. to DIN 43650
Type of protection:	IP 65 (with apparatus plug)

* Also see connection diagram.

Mounting:

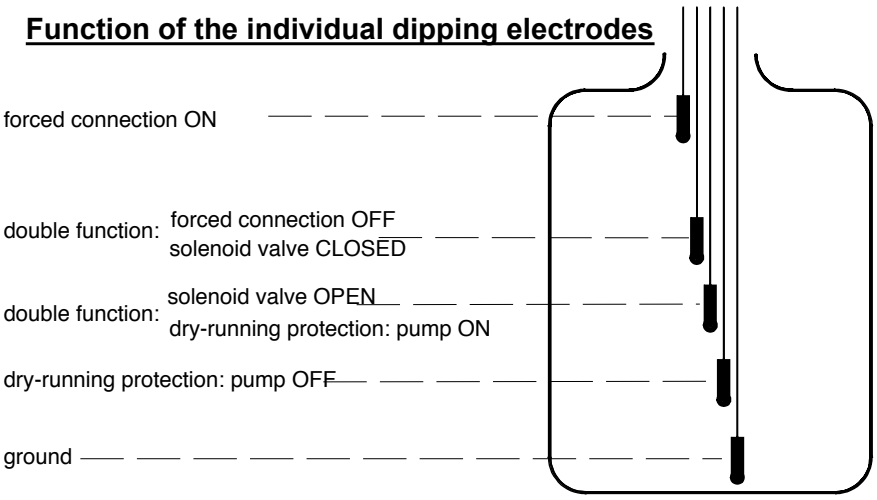
The control unit has to be installed according to its type of protection. **Before opening the housing, the unit absolutely has to be switched free of electrical tension by an all-pole main switch with a contact gap width of a minimum of at least 3mm. This main switch has to be integrated in the installation in place.**

2.6 Installation and operation *osf*-collector tank control

Installation of the dipping electrodes:

The osf dipping electrodes are provided with a water- and ozone-resistant special line in the standard version. The tensile strength of the line is sufficient to hang the electrodes into the overflow collecting vessel by means of this special line, while a touching contact of the individual electrodes may well be allowed. The line is fixed at the top of the vessel. Depending on the corresponding conditions in place, the line is fixed by means of strain relief clamps, cable clips, cable binders or similar construction elements. The special lines are brought together in a branch box which is to be installed in place. Starting from this branch box, one line (e.g. NYM-0 5x1.5 mm^2) is laid to the control unit.

Function of the individual dipping electrodes



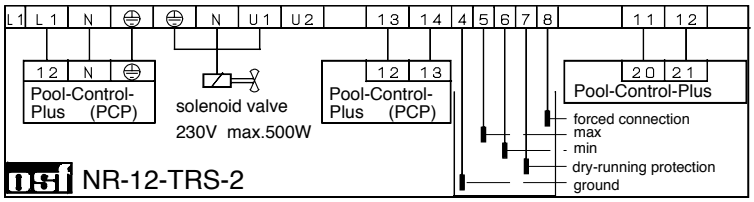
In normal operation, the water level fluctuates between the electrodes "solenoid valve OPEN" and "solenoid valve SHUT"

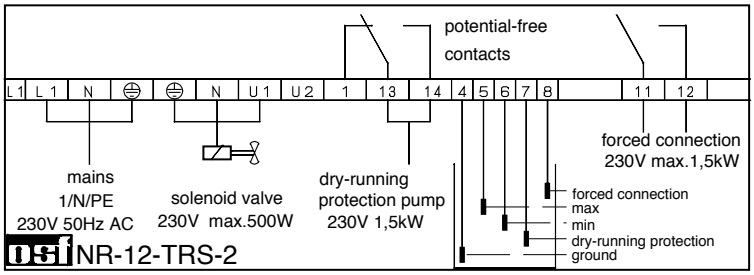
The height differences are dependent upon the individual conditions. To obtain adequate switch distances, at least 5 cm have to be ensured.

Electrical connection:

The electrical connection shall only be carried out by a qualified specialist electrician! The following cable arrangement and the corresponding safety instructions in force shall be observed. A fault current breaker with I_{FN}=30mA is to be provided for in the electric unit in place.

Examples for application:





These two examples for application demonstrate the combination with the osf filter control system Pool-Control-Plus (PCP) and a random control system.

The osf collecting vessel control NR-12-TRS-2 may be directly combined with other osf devices, e.g. re-flush- and solar control systems. The corresponding connection diagrams are added to the corresponding control systems.

2.6 Installation and operation *osf*-collector tank control

Connection of the dipping electrodes:

During connection of the dipping electrodes, in particular one has to see to it that the consequential order is not mixed up, for mixing-up of the electrodes unavoidably leads to malfunctions of the unit.
If the function "forced connection" is not applied, the corresponding dipping electrode (terminal 8) is not necessary. The connection terminal 8 is not used in this case. It need not be bridged.
All other dipping electrodes are necessary for the functioning of the control system, they cannot be dispensed with and shall not be bridged.

Functioning notes:

The osf collecting vessel control system NR-12-TRS-2 comprises the following functions:

a) Water level control.

If the water level decreases down to below the dipping electrode "solenoid valve OPEN" (terminal 6) due to a loss of water in the pool, e.g. by evaporation or re-flushing, the solenoid valve opens and the fresh water which is flowing in leads to an increase of the water level. As soon as the water level reaches the position of the dipping electrode "solenoid valve SHUT" (terminal 5) and touches the corresponding electrode, the solenoid valve closes the fresh water feed.

b) Dry-running protection of the filter pump.
If the water level decreases down to below the dipping electrode "Dry-running protection pump OFF" (terminal 7) due to a loss of water in the collecting vessel, e.g. as a result of re-flushing, the collecting vessel control systems switches off the filter pump preventing it from damage due to a lack of water. As soon as the water level rises again up to the height of the electrode "Dry-running protection pump ON" (terminal 6) and touches the electrode concerned, the osf collecting vessel control system automatically re-connects the filter control.

c) Forced connection.
If the water level increases in the collecting vessel and touches the dipping electrode "forced connection ON" (terminal 8) due to water displacement in the pool, the osf collecting vessel control system NR-12-TRS-2 (in connection with an osf filter control system) automatically connects the filter pump. Now, water is pumped back into the pool and thus an unnecessary loss of precious water is avoided. The dipping electrode "forced connection ON" (terminal 8) is to be mounted a few centimetres beneath the overflow.

A currentless closed solenoid valve has to be used.

After completion of the mounting- and installation works, a complete performance test has to be carried out.

We wish you much joy and recreation in your pool.

Subject to change without notice!

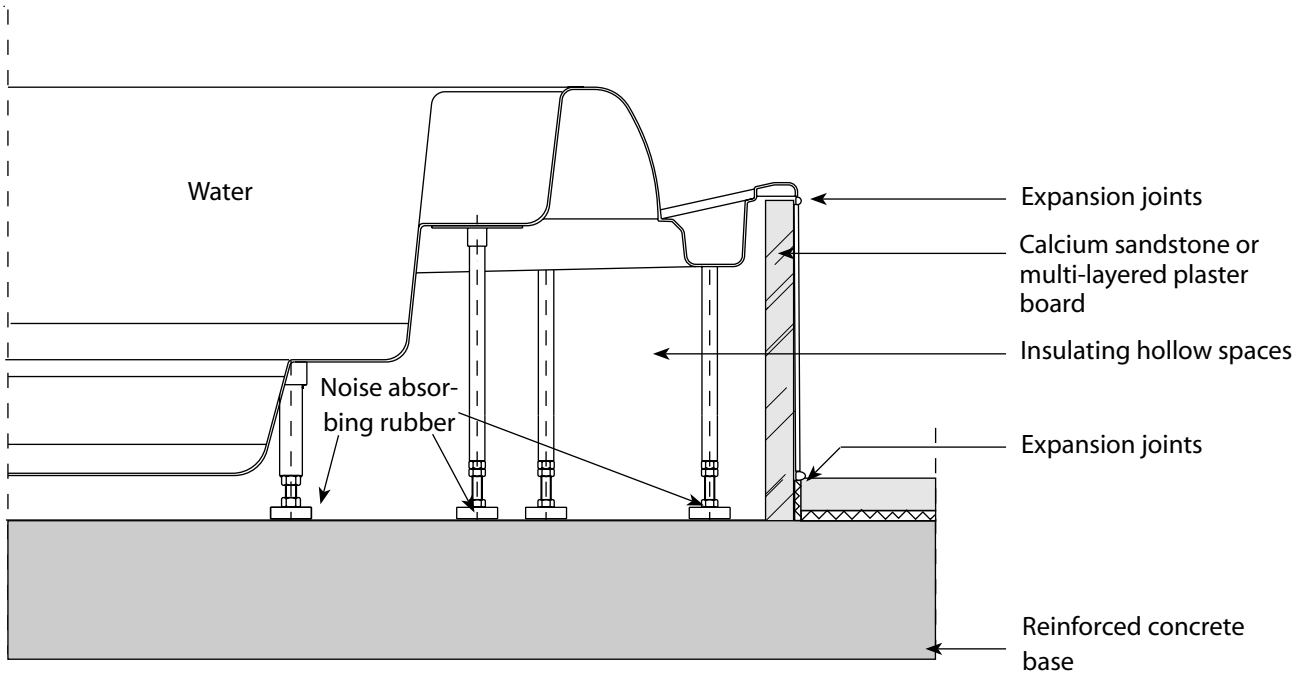
osf **July 07**

3. Noise reduction

3.1 Installing noise insulation precautions

Because of the way they are constructed, whirlpools produce a certain noise that is transmitted via material or air. In order to keep noise transmission to a minimum, we recommend installation according to the following instructions.

3.2 Installation without special noise insulation precautions



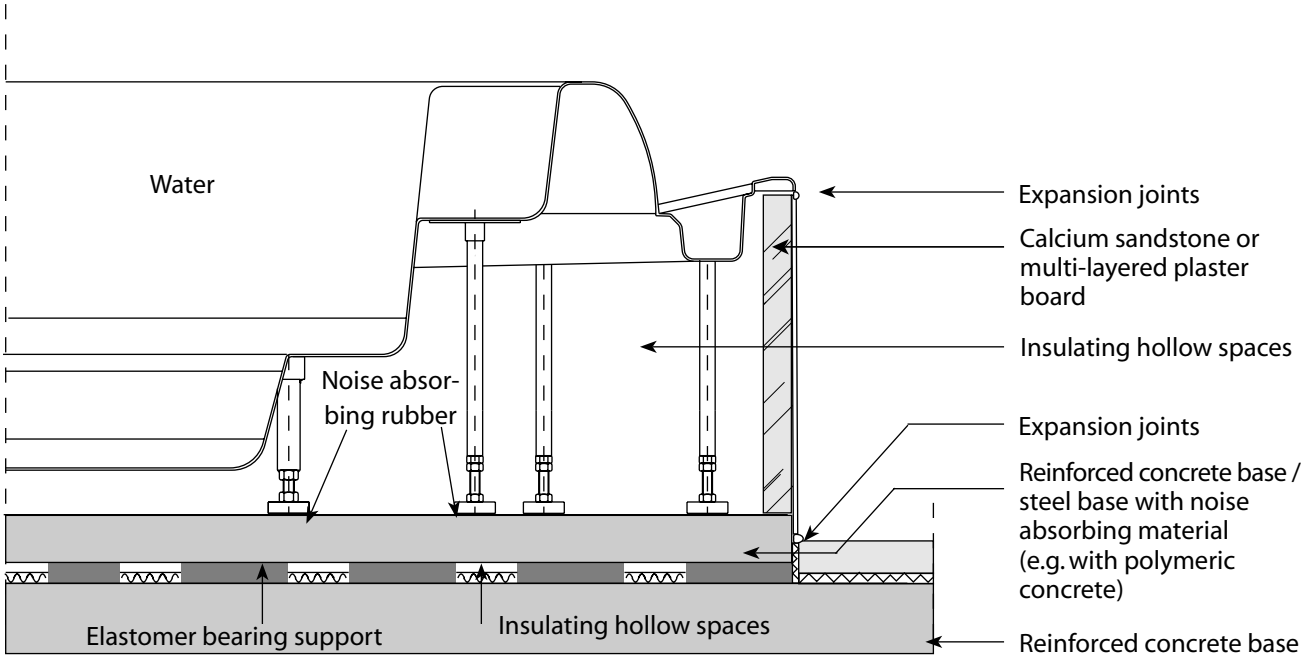
This recommendation is only sufficient if there are no rooms next to or below the installation room that require noise insulation according to VDI 4100 / DIN 4109 regulation.

- The edge of the bath tub should not lay directly on the tub wall. Opportunities for noise transmission should be avoided.
- Pipes that are installed through a wall should never be in direct contact with this wall (use noise absorbing sheathing).
- Install compensators in the pipe lines between the whirlpool and the aggregates.
- Assembly foam is acoustically not suitable (noise transmission).
- The hollow room under the tub should be protected with material that prevents noise from reverberating through the air (should be at least 200mm thick).
- Install noise absorbing bearings underneath the feet of the tub.

3. Noise reduction

3.3 Installation with special noise precautions.

More stringent noise absorbing requirements occur when living areas are situated below the whirlpool. The sound level in these rooms can not exceed the 35 dbA limit prescribed by DIN 4109 (25 dbA in industrial spaces). This noise level depends basically on the construction of the building and the installation, and the way the installation has been assembled. Therefore, we recommend individual, custom-made sound reducing planning on the basis of the diagram below.



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- Install compensators in the pipe lines between the whirlpool and the aggregates.
- Assembly foam is acoustically not suitable (noise transmission).
- The hollow room under the tub should be protected with material that prevents noise from reverberating through the air (should be at least 300mm thick).
- Noise absorbing bearings underneath the feet of the tub and underneath the reinforced concrete base / steel base; agreed-on frequency f0 = 10-12 Hz.
- Also required: elastic buffering of the reinforced concrete base (horizontal movement < 1 mm). Caution: Connections!

4. Mounting the installation

4.1 Mounting the whirlpool

Place the whirlpool on a level concrete base, adjust and secure feet with lock nuts

4.2 Mounting the Power Pak

The equipment pack should be installed in an equipment room that leaves enough space to access the equipment comfortably from all sides. Sufficient space and air should be present to cool the pumps and motors. The blower needs to be supplied with ca. 200 m^3 of fresh air. The maximum distance between the pool and the equipment should never be more than 10 m. The equipment pack should stand at the same floor level as the pool, in order for the pumps to always be filled with water.

The blower should be connected to the pool about 30 cm above the water surface via a waterproof hose coil.

4.3 Installing the pipelines

Please make sure that all pipelines can be drained completely. All drainage valves indicated on the diagram must be installed. Do not create air or water pockets .

Please note:

The channel drainage should be installed with a wide loop from the pool to the collector tank. This way the water can flow along the inside wall of the pipeline. This way the water willl cause less gurgling noise. Also, a bleeder valve should be installed on site underneath the channel drain, so that drawn in air can be released. The light comes with a 10m cable which should be connected to the transformer.

4.4 Connecting the pneumatic control cable

The PN-cables are connected to the Pak. The cables need to be drawn through a protective hose to the pool and connected to the pneumatic button according to the diagram.

4.5 Installing and connecting the mains cable

The Pak comes with a 1 m long connection cable. This needs to be removed and replaced by a permanent connection on site. This connection needs to be installed on site by a qualified and licensed electrician in compliance with local regulations.

4.6 Forced start

When a massage pump or the blower is switched on, the filtration system needs to be started as well in order to maintain the water level. After pump 1 of the blower stops running, the filtration system should continue to run for another 5 minutes. A potential-free outlet is available for on site connection of the filtration pump in the control box of the Power Pak.

5. Start-up and operation

5.1 Start up

- Close the water lines..
- Open the suction and pressure lines of the pumps.
- Fill the pool with water until the overflow channel.
- Fill half of the collector tank with water.
- Turn main switch to „ON“.

Operation pneumatic button at pool edge:

Button 1 press: *Light on*, Press again: *Light off*

Button 2 press: *Blower on,* Press again: *Blower off*

(After the air bubble blower has been switched on, it willl take a few seconds before the air comes out, because the blower need to press the water out of the pipes).

Button 3 press: *Massage pump 1 on,* Press again: *off*

Button 4 press: *Massage pump 2 on,* Press again: *off*

Please note: After the pumps are turned on for the first time, air is being pressed out of the pipes. It is possible that it willl take a few minutes bevore all jets operate continuously. The jets can be closed by turning the nozzle. It is necessary to check if all jets are properly opened.

5.2 Reversing valve and massage jets

By operating the reversing valve at the upper pool edge it can be regulated which jets are working when the pumps run.

Middle Position: The water flows evenly through all jets . Leave the valve in this position when the whrilpool is not being used.

Left Position: This is the massage position for jet line 1.

Right Position: Massage position for jet line 2.

The reversing valve can be moved back and forward in between these positions, in order to obtain an individual setting of the intensity of the massage. To do this, the jet pump needs to be turned off, the valve needs to be turned, and then the jet pump needs to be switched on again. In addition, the intensity of the Superjets (and with some models the Hydrojets) can be adjusted by turning the nozzle. While the massage pump is running, additional air can be added to the jets through position

„Jet 1“ or „Jet 2“ . To do this, the air regulator at the upper edge of the pool needs to be opened by turning the lever. The added air mix needs to be closed after the pool has been used.

5.3 Automatic Ringsing Cycle

The massage pumps and the blower are switched on automatically after every 6 hours, so that the disinfected water can flow through the pipes. This rinsing cycle lasts a few minutes. Please make sure that the filtration system operates at these sames times, in order to maintain the water level of the pool. If necessary, the time can be adjusted. In information sheet about the operation of the time clock can be found in the control cabinet.

6. Instructions for bathing

6.1 Water temperature

Water temperatures in whirlpools are significantly higher than those for instance of swimming pools. This is so, because it is through the combination of heat and the movement of the water that the desired feeling of relaxation can be achieved. However, this may cause increased pressure on the circulation. Therefore, in order to ensure safe bathing, always observe the following rules and follow these instructions for water maintenance.

The water temperature should be set at approximately 36° C. Higher temperatures can cause circulatory problems and lead to fatigue - lower temperatures of, for example 32°-33° C have an invigorating and refreshing effect. The ideal temperature will naturally depend on the constitution of each individual.

6.2 Duration of baths

The higher the temperature of the water, the less time should be spent in the water. If the water is 36° C the bathing time should be approximately 20 minutes, if the water is 38° C, no more than 10-12 minutes.

6.3 Taking a break

Each bath should be followed by a cool-down period of the same length of time. This can be done either by going out into the fresh air or by taking a swim in a cool pool.

6.4 Showering before bathing

Before entering the whirlpool, be sure to shower thoroughly. Otherwise the high temperature of the water means that impurities in the water will have to be treated with correspondingly high amounts of disinfectant.

6.5 Sauna and Whirlpool

The combination of sauna and whirlpool is only recommended for people whose constitution can really tolerate it. In any event, it is important to include a cooling off period between baths.

6.6 To be avoided

Never bathe after consuming alcohol, immediately after meals, with cold or flu symptoms and in no circumstances if suffering from a heart condition.

6.7 Bath salts, oils or foams

Bath salts, oils or foams should never be used in a whirlpool. These can cause excessive foaming or remain in the pipes and jets and pollute them.

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